

APPLICANT(S): PERETS, Yona et al.  
SERIAL NO.: 10/673,267  
FILED: September 30, 2003  
Page 2

### AMENDMENTS TO THE CLAIMS

Please add or amend the claims to read as follows, and cancel without prejudice or disclaimer to resubmission in a divisional or continuation application claims indicated as cancelled:

#### List of Claims

1. **(Currently Amended)** An apparatus comprising:  
a multi-algorithm detector to detect a ~~transmitted~~ signal according to a detection algorithm selected from two or more detection algorithms, the detector having a controller to choose a mode of operation for the selection of the detection algorithm from at least a power mode of operation and a performance mode of operation, wherein the selection of the detection algorithm is based on a predetermined selection criterion associated with a chosen mode of operation.
2. **(Currently Amended)** The apparatus of claim 1 wherein said detector comprises two or more sub-detectors able to detect said ~~transmitted~~ signal according to said two or more detection algorithms, respectively.
3. **(Currently Amended)** The apparatus of claim 2 wherein said detector comprises a controller is to control the selection of said detection algorithm according to outputs of said sub-detectors.
4. **(Currently Amended)** The apparatus of claim 3 wherein said controller is able to control activation of one or more of said at two or more sub-detectors.
5. **(Currently Amended)** The apparatus of claim 4 wherein if a performance mode of operation is selected, said controller is able to activate at least some two of said ~~two or more~~ sub-detectors substantially simultaneously.
6. **(Currently Amended)** The apparatus of claim 4 wherein if a power mode of operation is selected, said controller is able to activate only one of said two or more sub-detectors or sequentially activate at least ~~some~~ two of said two or more sub-detectors according to a preset sequence.

APPLICANT(S): PERETS, Yona et al.  
SERIAL NO.: 10/673,267  
FILED: September 30, 2003  
Page 3

7. (Original) The apparatus of claim 3 wherein said controller comprises a calculator to calculate a quality metric corresponding to one or more of said sub-detectors.
8. (Original) The apparatus of claim 7 wherein said quality metric comprises a quality metric selected from the group consisting of a signal to noise ratio, a log likelihood ratio, and a mean square error.
9. (Original) The apparatus of claim 7 wherein said controller comprises a max-detector to detect a highest quality metric of two or more quality metrics corresponding to two or more of said sub-detectors, respectively.
10. (Currently Amended) The apparatus of claim 1 ~~having a~~ wherein the predetermined selection criterion associated with the power mode of operation, wherein said criterion relates to a preset minimum quality value.
11. (Currently Amended) The apparatus of claim 1 ~~having a~~ wherein the predetermined selection criterion associated with the performance mode of operation, wherein said criterion relates to a highest quality metric of two or more quality metrics corresponding to said detection algorithms.
12. (Original) The apparatus of claim 1 wherein one or more of said detection algorithms comprises a minimum mean square error algorithm.
13. (Original) The apparatus of claim 1 wherein one or more of said detection algorithms comprises a maximal likelihood sequence estimation algorithm.
14. (Currently Amended) A wireless communications device comprising:
  - ~~a transceiver able~~ two or more antennas to send and receive signals a  
signal;
  - a multi-algorithm detector to detect ~~a transmitted~~ the signal according to a detection algorithm selected from two or more detection algorithms, the detector having a controller to choose a mode of operation for the selection of the detection algorithm from at least a power mode of operation and a performance mode of operation, wherein the selection of the detection algorithm is based on a predetermined selection criterion associated with a chosen mode of operation.

APPLICANT(S): PERETS, Yona et al.  
SERIAL NO.: 10/673,267  
FILED: September 30, 2003  
Page 4

15. (Currently Amended) The device of claim 14 wherein said detector comprises two or more sub-detectors able to detect said ~~transmitted~~ signal according to said two or more detection algorithms, respectively.
16. (Currently Amended) The device of claim 15 wherein said ~~detector comprises a~~ controller is to control the selection of said detection algorithm according to outputs of said sub-detectors.
17. (Original) The device of claim 16 wherein said controller comprises a calculator to calculate a quality metric corresponding to one or more of said sub-detectors.
18. (Original) The device of claim 17 wherein said quality metric comprises a quality metric selected from the group consisting of a signal to noise ratio, a log likelihood ratio, and a mean square error.
19. (Original) The device of claim 17 wherein said controller comprises a max-detector to detect a highest quality metric of two or more quality metrics corresponding to two or more of said sub-detectors, respectively.
20. (Original) The device of claim 14 ~~having a~~ wherein the predetermined selection criterion associated with the power mode of operation, ~~wherein said criterion~~ relates to a preset minimum quality value.
21. (Original) The device of claim 14 ~~having a~~ wherein the predetermined selection criterion associated with the performance mode of operation, ~~wherein said criterion~~ relates to a highest quality metric of two or more quality metrics corresponding to said detection algorithms.
22. (Currently Amended) A method comprising:  
choosing a mode of operation for the selection of a signal-detection algorithm from at least a power mode of operation and a performance mode of operation;  
and  
selecting the a signal-detection algorithm from two or more detection algorithms, wherein the selection of the detection algorithm is based on ~~according to~~ a predetermined selection criterion associated with a chosen mode of operation.

APPLICANT(S): PERETS, Yona et al.  
SERIAL NO.: 10/673,267  
FILED: September 30, 2003  
Page 5

23. (Currently Amended) The method of claim 22 ~~comprising~~ wherein the chosen mode of operation is the performance mode of operation and the method comprises:

calculating two or more quality metrics corresponding to said two or more signal-detection algorithms, respectively; and

selecting from the two or more signal-detection algorithms a signal-detection algorithm corresponding to a highest quality metric of said calculated metrics.

24. (Currently Amended) The method of claim 22 ~~comprising~~ wherein the chosen mode of operation is the power mode of operation and the method comprises:

~~sequentially~~ calculating according to a predetermined sequence a first quality metric corresponding to a first signal-detection algorithm of said two or more signal-detection algorithms; ;

selecting the first ~~wherein said selected~~ signal-detection algorithm if ~~corresponds to a calculated the first~~ quality metric ~~has~~ having a value higher than a preset minimum-quality value;

calculating according to the predetermined sequence a second quality metric corresponding to a second signal-detection algorithm of said two or more signal-detection algorithms, if the first quality metric has a value lower than the preset minimum-quality value; and

selecting the second signal-detection algorithm if the second quality metric has a value higher than the preset minimum-quality value.

25. (Currently Amended) An article comprising a computer-storage medium having stored thereon instructions that, when executed by a processing platform, result in:  
choosing a mode of operation for the selection of a signal-detection algorithm from at least a power mode of operation and a performance mode of operation;  
and

selecting the a signal-detection algorithm from two or more detection algorithms, wherein the selection of the detection algorithm is based on according to a predetermined selection criterion associated with a chosen mode of operation.

APPLICANT(S): PERETS, Yona et al.  
SERIAL NO.: 10/673,267  
FILED: September 30, 2003  
Page 6

26. (Currently Amended) The article of claim 25 ~~comprising~~ wherein when the chosen mode of operation is the performance mode of operation the instructions further result in:

calculating two or more quality metrics corresponding to said two or more signal-detection algorithms, respectively; and  
selecting from the two or more signal-detection algorithms a signal-detection algorithm corresponding to a highest quality metric of said calculated metrics.

27. (Currently Amended) The ~~method~~ article of claim 25 ~~comprising~~ wherein when the chosen mode of operation is the performance mode of operation the instructions further result in:

~~sequentially~~ calculating according to a predetermined sequence a first quality metric corresponding to a first signal-detection algorithm of said two or more signal-detection algorithms;

~~selecting the first wherein said selected signal-detection algorithm if corresponds to a calculated the first~~ quality metric has having a value higher than a preset minimum-quality value;

calculating according to the predetermined sequence a second quality metric corresponding to a second signal-detection algorithm of said two or more signal-detection algorithms, if the first quality metric has a value lower than the preset minimum-quality value; and

selecting the second signal-detection algorithm if the second quality metric has a value higher than the preset minimum-quality value.

28. (Currently Amended) A communication system comprising:

a first communication device to transmit a signal through a communication channel; and

a second communication device to receive said signal, said second communication device comprising a multi-algorithm detector to detect a ~~transmitted~~ signal according to a detection algorithm selected from two or more detection algorithms, the detector having a controller to choose a mode of operation for the selection of the detection algorithm from at least a power

APPLICANT(S): PERETS, Yona et al.  
SERIAL NO.: 10/673,267  
FILED: September 30, 2003  
Page 7

mode of operation and a performance mode of operation, wherein the selection of the detection algorithm is based on a predetermined selection criterion associated with a chosen mode of operation.

29. **(Currently Amended)** The system of claim 28 wherein said detector comprises two or more sub-detectors able to detect said ~~transmitted~~ signal according to said two or more detection algorithms, respectively.
30. **(Currently Amended)** The system of claim 29 wherein said ~~detector comprises a~~ controller is to control the selection of said detection algorithm according to outputs of said sub-detectors.
31. **(Currently Amended)** The system of claim 30 wherein said controller is ~~able to~~ control activation of one or more of said ~~at~~ two or more sub-detectors.
32. (Original) The system of claim 30 wherein said controller comprises a calculator to calculate a quality metric corresponding to one or more of said sub-detectors.
33. (Original) The system of claim 32 wherein said quality metric comprises a quality metric selected from the group consisting of a signal to noise ratio, a log likelihood ratio, and a mean square error.
34. (Original) The system of claim 32 wherein said controller comprises a max-detector to detect a highest quality metric of two or more quality metrics corresponding to two or more of said sub-detectors, respectively.
35. (Original) The system of claim 28 wherein one or more of said detection algorithms comprises a minimum mean square error algorithm.
36. (Original) The system of claim 28 wherein one or more of said detection algorithms comprises a maximal likelihood sequence estimation algorithm.